STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION'S

STANDARDS AND SYMBOLS
FOR PHOTOGRAMMETRIC MAPPING
(SSPM)

ENGLISH AND METRIC
EDITION

TABLE OF CONTENTS

LEVEL   PAGE No.

CONTROL

SHOW ALL FIELD CONTROL AND ANALYTICAL POINTS IN MODELS USED.
ALL CONTROL SHALL BE ROTATED IN THE DIRECTION OF THE FLIGHT LINE.
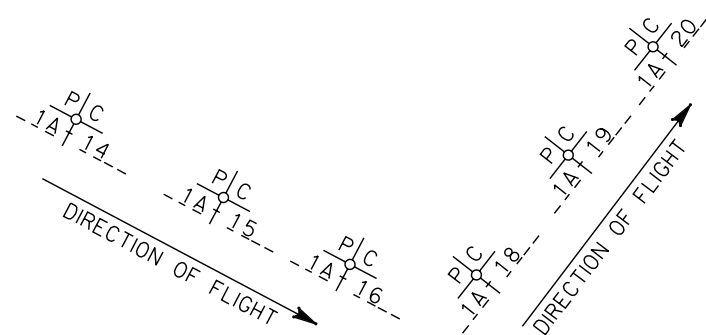CONTROL CELLS NEED TO BE POINT CELLS AND VIEW INDEPENDENT.

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
C-0	9101020 ⊕ 12345.1	0	ATC	ANALYTICAL (PUG) POINT DECIMAL PLACES: ENGLISH X,Y=2; Z=1 METRIC X,Y=3; Z=2
C-1	___VC-1A___ ⊙ 12345.1	0	VC	VERTICAL FIELD CONTROL POINT DECIMAL PLACES: ENGLISH X,Y=2; Z=1 METRIC X,Y=3; Z=2
C-2	___HC-1A___ △	0	HC	HORIZONTAL FIELD CONTROL POINT. PLACE AT X,Y,Z GIVEN IN CONTROL FILE.
C-3	__HVC-1A___ △ 12345.1	0	HVC	HORIZONTAL AND VERTICAL FIELD CONTROL POINT DECIMAL PLACES: ENGLISH X,Y=2; Z=1 METRIC X,Y=3; Z=2
C-4	_AT&T_#15C_ ◇ 12345.1	0	C4	MISCELLANEOUS ANALYTICAL POINT DECIMAL PLACES: ENGLISH X,Y=2; Z=1 METRIC X,Y=3; Z=2
C-5	P C 10A 1234	0	PC	PHOTO CENTERS SHALL BE ORIENTED SO THAT THEIR TEXT IS RIGHT - READING WHEN THE EXPOSURE NUMBERS INCREASE FROM LEFT TO RIGHT. (ACTIVE ANGLE IN THE DIRECTION OF THE OF THE FLIGHT LINE)

CONTROL

OoP
REFERENCE
CODE

C-6   EXAMPLE OF PHOTO
CENTER LAYOUT

P|C
-1Δ†14--

P|C
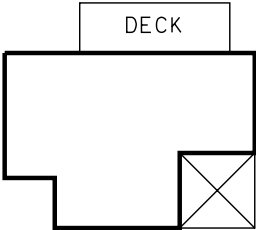-1Δ†15--

P|C
-1Δ†16--

DIRECTION OF FLIGHT

P|C
-1Δ†18--

P|C
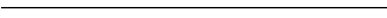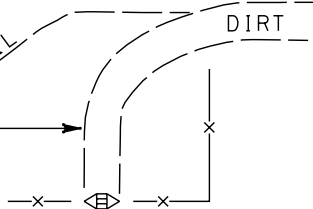-1Δ†19--

P|C
-1Δ†20--

DIRECTION OF FLIGHT
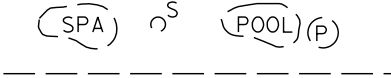
PLACE CONTROL AND PHOTO CENTERS IN TOP VIEW, NOT A ROTATED VIEW.
ALL CONTROL AND PHOTO CENTERS SHOULD BE PLACED AT THE TRUE
GROUND ELEVATION.

TIP:
SET ACTIVE ANGLE TO DIRECTION OF FLIGHT LINE. USE PLACPNTOI.BAS MACRO TO LOAD
CONTROL POINTS AND PHOTO CENTERS FROM DATA IN THE OFFICE OF PHOTOGRAMMETRY
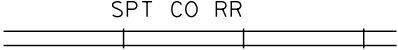SUPPLIES *.GPE FILE.
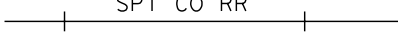
MANMADE PLANIMETRY

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
M-1	DECK	0	ph-Deck	A) LABEL DECKS, USE 'D' FOR SMALL DECKS.
		2	ph-Build	B) BUILDINGS AND MOBILE HOMES. DO NOT SHOW TRAVEL TRAILERS.
		0	ph-Deck	C) COVERED PORCH, CARPORT, PATIO, AND APARTMENT COVERED PARKING.
M-2	TANK ○T	0	LS=0	LABEL TANKS - DO NOT SHOW TANKS 5ft (1.5m) IN DIAMETER OR SMALLER.
M-3	POST FP WM MISC. ● ○ ○ ○	0	POLE SP	POST, FLAGPOLE, WINDMILL, LABEL AS SHOWN.
M-4	SPA ○S POOL (P)	0	LS=3	CONCRETE LIMIT LINE: DRIVEWAY, PATIO, SIDEWALK, GUTTER, LABEL POOL AND SPA.
M-5		0	LS=0	MISCELLANEOUS BOUNDARY: STAIRS, RAMP, BOARDWALK. LABEL AS NECESSARY TO CLARIFY. LABEL 'RUINS' AND CONSTRUCTION AREAS 'UC'.
M-6	TRAIL DIRT	0	ph-Dirt	A) LABEL TRAILS.
M-6A		0	ph-Dirt	B) DIRT ROADS.
M-7		0	ph-Cattle	C) CATTLE GUARD.

MANMADE PLANIMETRY

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
M-8		0	LS=0	FREEWAY AND BUSINESS ADVERTISING SIGNS. SHOW POST LOCATION, DO NOT SHOW CATWALK.
M-9		0	SIGN1 SIGN2	ROADSIDE SIGNS AND BILLBOARDS. MINIMUM SIZE 0.08in (2mm) ON MAP. (NOT SHOWN AT 1:1000 OR 1"=100')
M-10	SPT CO RR	0	ph-RR500 ph-RR200	RAILROAD: USE ph-RR500 FOR 1"=50' OR 1:500 USE ph-RR200 FOR 1"=20' OR 1:200 USE ph-RR1K FOR 1"=100' OR 1:1000 CONTOURS AND SPOT ELEVATIONS ON TOP OF TIES.
M-11	SPT CO RR	0	ph-RR1K	LABEL RAILROAD NAME.
M-12		0	ph-MedBar ph-fMedBar	MEDIAN BARRIER - ALL TYPES.
M-13		0	ph-GrdRail	GUARD RAIL.
M-14	CC	0	SP	CRASH CUSHIONS: LABEL AS SHOWN.
M-15	DP	0	LS=2	MISC. BOUNDARY: LABEL DIRT PILES AS SHOWN.
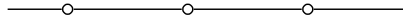
MANMADE PLANIMETRY

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
M-16	— — — — — —	0	ph-Asph	EDGE OF ASPHALT FOR DRIVEWAYS, PRIVATE ROADS, PARKING AREAS, PLAYGROUNDS, ETC. ALSO, SEE R-3 ON LEVEL 3, PAGE 6.
M-17	▬ ▬ ▬ ▬ ▬ ▬	2	ph-Curb ph-fCurb	BARRIER CURB IN PARKING LOTS, DRIVEWAYS, ETC. (IF STATE, COUNTY, OR CITY ROADS USE R-5). ALSO, SEE LEVEL 3, SEE PAGE 6.
M-18	DIKE	2	ph-Dike	SYMBOLIZE AND LABEL ASPHALT DIKE AS SHOWN FOR PARKING LOTS.
M-19	- — — — — —	0	ph-LnStrp ph-fLnStrp	SYMBOLIZE LANE STRIPES FOR SHOPPING CENTERS AND PRIVATE PARKING LOTS.

FENCES AND WALLS
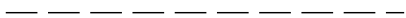
OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
F-1	▬⌃▬×▬⌃▬×▬	2	ph-RWallF	RETAINING WALL WITH FENCE ON TOP WITH THE "V" POINTING TOWARDS THE HIGH SIDE. (ADD D-2 BREAK LINE NEAR FRONT AND BACK OF WALL).
F-2	×—×—⌃—×—	0	ph-Fence	(A)FENCE (B)GATE.
F-3	—○—○—○—	0	ph-MWall	MASONRY WALL OR SOUNDWALL.
F-4	▬⌃▬⌃▬⌃▬	2	ph-RWall	RETAINING WALL WITH "V" TOWARD HIGH SIDE (ADD D-2 BREAKLINE NEAR FRONT AND BACK OF WALL).
F-5	▬⌃▬○▬⌃▬○▬⌃	2	ph-RWallM	RETAINING WALL WITH MASONRY WALL. (ADD D-2 BREAKLINE NEAR FRONT AND BACK OF WALL).
F-6	—○—×—○—×—	0	ph-MWallF	MASONRY WALL WITH FENCE ON TOP.
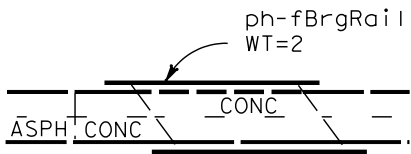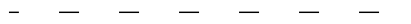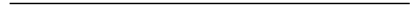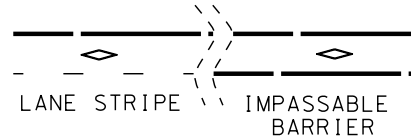
STATE, COUNTY AND CITY ROADS

LEVEL 3 - COLOR 4

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
R-1		2	ph-ETW ph-fETW	EDGE OF TRAVELED WAY FOR STATE HIGHWAY. SEE TRAVELED WAY NOTES AND EXAMPLES ON PAGES 8 THRU 10.
R-2		2	ph-ETW2 ph-fETW2	EDGE OF TRAVELED WAY FOR RAMPS, COUNTY ROADS AND CITY STREETS.SEE TRAVELED WAY NOTES SEE PAGES 8 THRU 10.
R-3		0	ph-Asph	EDGE OF ASPHALT FOR STATE, COUNTY ROADS AND CITY STREETS. ALSO, SEE M-16 LEVEL 2.
R-4		2	ph-Curb ph-fCurb	CONCRETE BARRIER CURB, (GUTTER IS LS=3, WT=0)
R-5		0	ph-Curb ph-fCurb	CONCRETE BARRIER CURB, NO GUTTER.
R-6		0	LS=3	ROLLED CURB & GUTTER.
R-7		0	LS=3	CONCRETE LIMIT LINE.
R-8	DIKE	2	ph-Dike	SYMBOLIZE AND LABEL ASPHALT DIKE AS SHOWN.

STATE, COUNTY AND CITY ROADS

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
R-9	ph-fBrgRail WT=2 / ASPH CONC CONC CONC	2	ph-fBrgRail	BRIDGE: SHOW RAILS, CURB, AND ENDS OF BRIDGE. LABEL SURFACE TYPE. LABEL PEDESTRIAN OVERCROSSINGS 'PED OC'. SEE BRIDGE DETAIL BELOW.
R-10		0	ph-LnStrp ph-fLnStrp	LANE STRIPING. SEE TW 8 ON PAGE 8 AND E-7, E-9 ON PAGE 9.
R-11		0	LS=0	CROSSWALK AND STOPLINE/LIMIT LINE.
R-12		2	ph-ETW2 LTA	LEFT TURN LANE ARROWS - SYMBOLIZE EXISTING OR ONCE PER MODEL AS NEEDED. DO NOT PLOT OTHER TRAFFIC ARROWS.
R-13	LANE STRIPE IMPASSABLE BARRIER	2	ph-ETW DIAMND ph-LnStrp	HIGH OCCUPANCY VEHICLE (HOV) LANE. SYMBOLIZE EXISTING DIAMONDS OR AS NEEDED.

BRIDGE DETAIL:

R-9A

ph-fBrgRail WT=2 — ph-fcurb — ph-LnStrp
ASPH | CONC   CONC
Bridge Notch LS=3
ph-ETW — ph-fETW — ph-fLnStrp — ph-fBrgRail
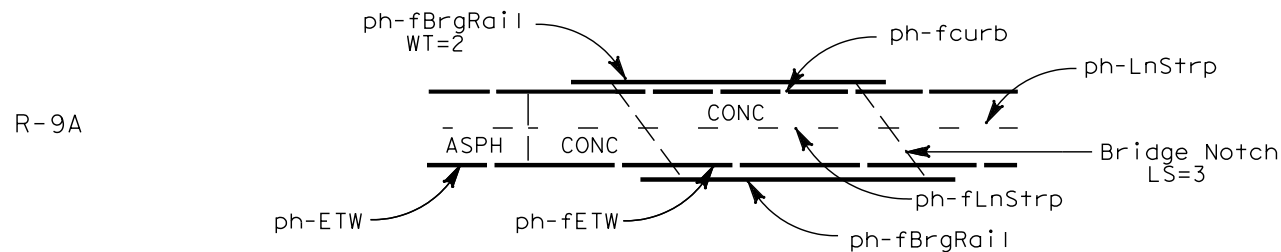
TYPICAL TRAVELED WAY (TW) NOTES FOR R-1 & R-2

OoP REFERENCE CODE	PHOTO		MAPPING
TW-1	CONCRETE		PLACE TW ON EDGES OF CONCRETE.
TW-2	ASPHALT		A) PLACE TW ON FOG STRIPES (EDGE LINES). B) IF FOG STRIPE IS LESS THAN 3FT (1m) FROM EDGE OF ASPHALT, ONLY SHOW FOG STRIPE.
TW-3	CURB AND/OR GUTTER		PLACE IN LIEU OF TW IF CURB IS WITHIN ONE METER OF THE FOG STRIPE.
TW-4	BIKE LANE		PLACE TW ON ROADWAY SIDE OF BIKE LANE. LABEL `BIKE LANE'.
TW-5	NO VISIBLE FOG STRIPE		PLACE TW AT EDGE OF ASPHALT.
TW-6	CONTINUOUS LEFT TURN		PLACE TW ON BOTH SIDES OF LEFT TURN LANE. PLACE LEFT TURN ARROWS.
TW-7	LEFT TURN CHANNELIZING		PLACE TW IN LIEU OF CHANNELIZED STRIPING.
TW-8	TWO LANE HIGHWAY		PLACE R-10 (LANE STRIPE), NOT TW ON CENTER LINES.
TW-9	INTERSECTIONS & RAMPS		DO NOT PLACE TW ACROSS RAMP ENTRANCES, EXITS, OR INTERSECTIONS.

IF IT IS NOT TYPICAL OR OBVIOUS WHERE TRAVELED WAY SHOULD BE PLACED, CALL THE OFFICE OF PHOTOGRAMMETRY IN SACRAMENTO FOR GUIDANCE. PLEASE REFER TO EXAMPLES ON PAGE 9.

TYPICAL TRAVELED WAY EXAMPLES

CONCRETE FREEWAY

CONC

E-1   ALL TYPES MEDIAN BARRIER

ASPHALT FREEWAY

ASPH

HIGH OCCUPANCY VEHICLE
(HOV)

E-2

(HOV) WITH BARRIER

UNDIVIDED MULTI-LANE

E-3

STREET (TWO WAY)

E-4   MULTILANE STREET
(ONE WAY)

E-5   MULTI-LANE STREET
WITH CONTINUOUS
TWO WAY
LEFT TURN ONLY

TWO LANE STREET
WITH CONTINUOUS
E-6   TWO WAY
LEFT TURN ONLY

MULTILANE STREET
WITH LEFT TURN
E-7   "POCKETS" AT
INTERSECTIONS
(TWO WAY)
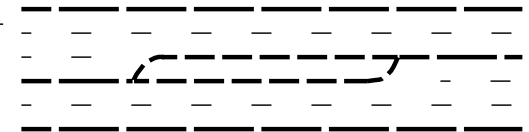
TWO LANE STREET
WITH LEFT TURN
E-8   "POCKET" AT
INTERSECTIONS

E-9   TWO LANE STREET
NO "FOG STRIPE"
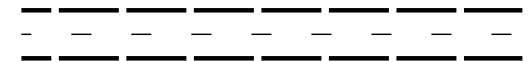
TWO WAY CITY STREET:

CURB AND GUTTER

E-10   PLACE CURB IN LIEU
OF TW IF CURB IS
WITHIN ONE METER
OF THE FOG DTRIPE
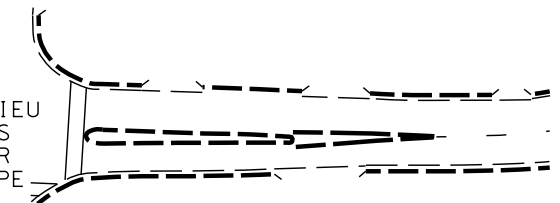
TYPICAL TRAVELED WAY FOR "ON" AND "OFF" RAMPS
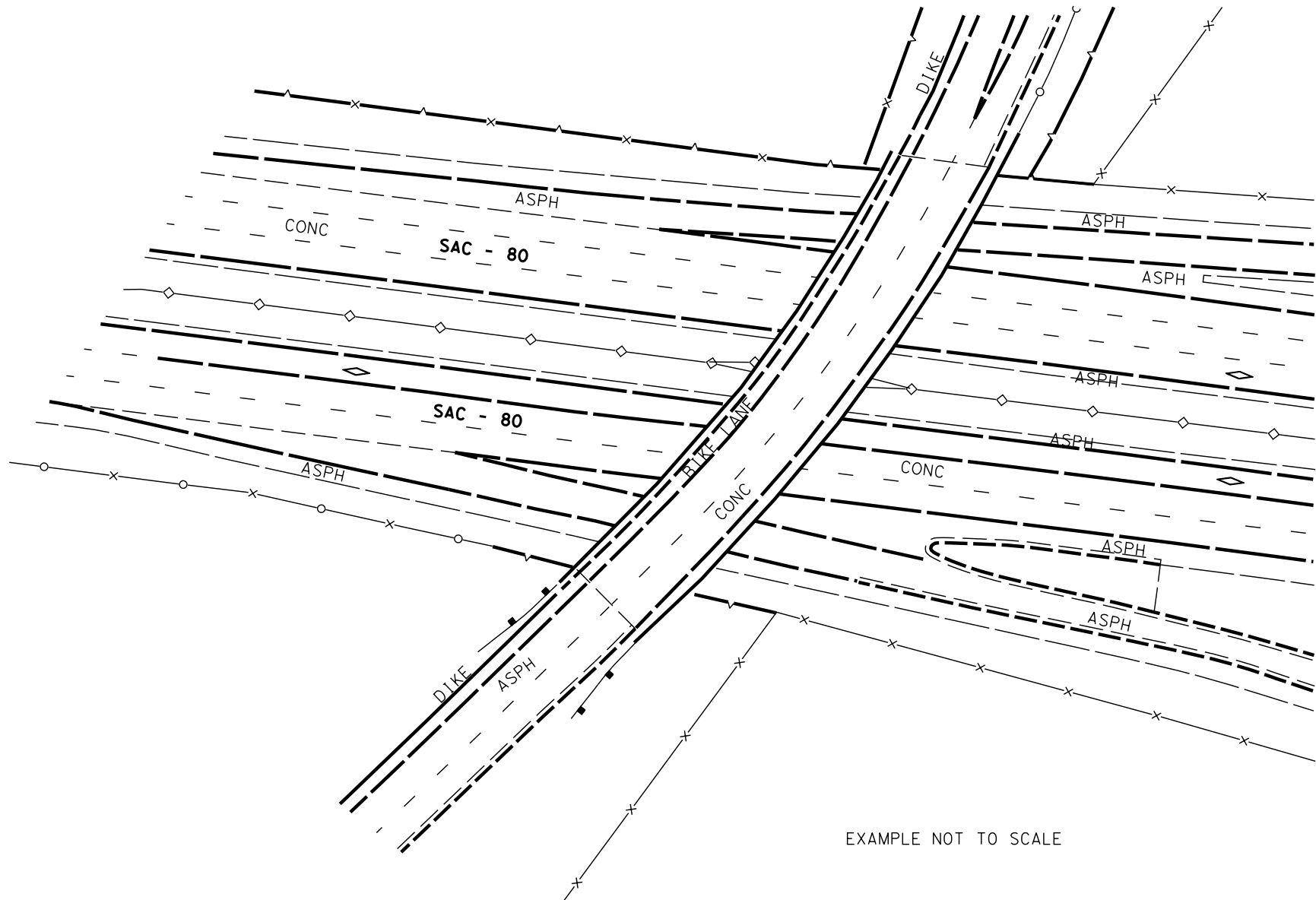
DIKE

ASPH

CONC

SAC - 80

ASPH

ASPH

SAC - 80

BIKE LANE

CONC

ASPH

ASPH

CONC

ASPH

DIKE

ASPH

ASPH

ASPH

EXAMPLE NOT TO SCALE

10

VEGETATION AND NATURAL FEATURES
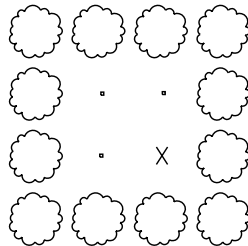
OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
V-1		0	TR4 TR8	ORCHARDS: PERIMETER TREES TO SCALE, USE A "DOT" FOR INTERIOR TREES, "X" FOR MISSING TREES. "X" = FONT 2 TEXT SIZE 5FT (1.5M) FOR 1"=50' (1:500) DRIP LINE OF TREE COMPILED AT TOP OF FOILAGE.
V-2		0	ph-Vines	VINEYARDS: LINES SHOW ROW DIRECTION, LINESTYLE ph-Vines PLACES THE "V" AT THE ENDS.
V-3	ORCHARD/ VINEYARD	0	ph-Trees	1"=100 (1:1000) SCALE AND SMALLER: SYMBOL AROUND PERIMETER AND LABEL AS SHOWN. NOTE: PLOT PERIMETER TREES AND ROWS FOR 1"=50'(1:500) OR GREATER.
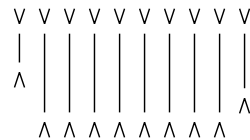
VEGETATION AND NATURAL FEATURES

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
V-4		0	ph-Trees TR8 TR4	(A) TREES & PALMS, BRUSH, GROUND COVER GREATER THAN $\frac{1}{2}$ CONTOUR INTERVAL, HEDGES AND ROWS OF NARROW TREES. LABEL PALM TREES WITH THE LETTER "P" IN THE CENTER.

REQUIRED LABELS

CULTIVATED
SCATTERED/ ROCKS
      BRUSH

(B) LABEL ONLY AND DO NOT SYMBOLIZE LARGE AREAS.
    USE REQUIRED LABELS

DENSE/ TREES
    BRUSH
    GROUND COVER
    CROPS

(C) LABEL, SYMBOLIZE, AND DASH CONTOURS THROUGH AREAS WITH GROUND COVER OVER ONE HALF CONTOUR INTERVAL HIGH. DO NOT DASH CONTOURS THROUGH SINGLE TREES. (USE REQUIRED LABELS)

GNV

(D) DO NOT USE GNV IN SMALL AREAS* OF DENSE TREES. USE ONLY IF THERE ARE NO OPENINGS TO PLACE A SPOT ELEVATION IN LARGE DENSE TREE AREAS.

* PLOTTED AREA LESS THAN 2"x 2"n (50mm x 50 mm)

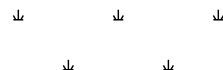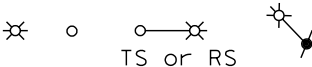|				
V-5		0	LS=2	DO NOT CONTOUR LARGE ROCKS HIGHER THAN ONE CONTOUR INTERVAL - SYMBOLIZE (LS=2), LABEL, AND PLACE A SPOT ELEVATION ON TOP.
V-6		0	MRSH	MARSH OR SWAMP.
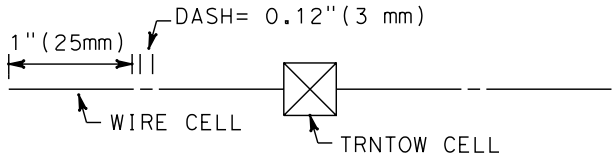
UTILITIES AND DRAINAGE

LEVEL 5 - COLOR 6

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
U-1	TS or RS	0	EL ELT PP	ELECTROLIER, ALUMINUM POLE, TRAFFIC OR RAILROAD SIGNAL (LABEL TS OR RS), AND POLE WITH WIRES AND ELECTROLIER
U-2		0	POLE PP ANCHT	WOOD POLE, POLES WITH WIRES AND GUY WIRE
U-3	1"(25mm) DASH= 0.12"(3 mm) WIRE CELL TRNTOW CELL	0	WIRE TRNTOW	TRANSMISSION TOWER (TO SCALE) & LINES
U-4	☺	0	MH	MANHOLE DIAMETER = 0.12" (3 mm)
U-5	VC SP WELL UB RS	0	SP	VALVE COVER, STANDPIPE, WELL, UTILITY BOX, AND RAILROAD CROSSING STANDARD, LABEL AS SHOWN (RECTANGLE SIZE IS NOT STANDARD - (SHOW ACTUAL SIZE)
U-6		0	DI RDI	DRAINAGE DROP INLET 0.08"x 0.05" (2mm x 1.3 mm) ROUND DROP INLET DIAMETER = 0.08in (2 mm)
U-7	+○+	0	FH	FIRE HYDRANT - OVERALL LENGTH 0.24in (6 mm).
U-8	⌐ Ⅰ) =	2	LS=0	HEADWALLS: D-2 BREAKLINES SHOULD BE PLACED ON GROUND NEAR BOTH FRONT AND BACK OF HEADWALLS.
U-9	PIPE	0	LS=0	LABEL ABOVE GROUND PIPES.

UTILITIES AND DRAINAGE

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
U-10	__U/G PIPE_.	0	LS=3	DO NOT SHOW UNDERGROUND PIPES UNLESS SPECIFIED TO DO SO.
U-11	▣	0	CBX	CALL BOX 0.12" (3 mm) SQUARE

14

WATER

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
W-1	DRY WASH	0		LABEL - DO NOT CROSSHATCH OR SHOW WATER SYMBOL. CONTOURS AND SPOT ELEVATIONS WILL SHOW GENERAL BOUNDARIES.
W-2	FLOWLINE	0	ph-FL	SMALL NATURAL STREAM OR UNLINED DITCH, SHOW WATER LINE EVEN IF DRY.
W-2A	EDGE OF WATER	0	ph-Water	SHOW SHORELINE OR WATERS EDGE WITH A BODY OF WATER.
W-3	51.2	0		**LARGER NATURAL STREAMS:** CROSSHATCH AREA AND LABEL NAMES, CROSSHATCHING SHOULD BE APPROXIMATELY 45 DEGREES TO EDGE OF WATER GRADUALLY ROTATE AS STREAM CHANGES DIRECTION, DO NOT CHANGE DIRECTION BETWEEN DESIGN FILES.
W-4	NAME W/L 47.6	0	ph-Water	**STANDING BODIES OF WATER:** LABEL WATER LEVEL AS SHOWN. CROSSHATCH AROUND EDGE APPROX. 0.6" (15 mm) INTO WATER. LABEL BODY OF WATER WITH NAME.
W-5	LEVEL 2	0	ph-FL	CONCRETE LINED "V" DITCH, SHOW FLOW LINE, EVEN IF DRY.
W-6	LEVEL 2 DRY	0	ph-FL	CONCRETE LINED CHANNEL WITH **VERTICAL SIDES** IF DRY, LABEL 'DRY' AND DO NOT CROSSHATCH.
W-7	LEVEL 2 DRY	0	ph-FL	CONCRETE LINED CHANNEL WITH **SLOPING SIDES** IF DRY, LABEL 'DRY' AND DO NOT CROSSHATCH. PLACE WATER SYMBOL AT TOE OF SIDES.

CONTOURS

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
K-1		0/2	LS=0	SOLID CONTOUR LINES - OPEN AREAS AND AREAS OF SCATTERED VEGETATION. INDEX CONTOURS WT=2, INTERMEDIATE CONTOURS WT=0.
K-2		0/2	ph-GNV	GROUND NOT VISIBLE- DASH CONTOUR LINES - IN DENSE AREAS, PLACE A SPOT ELEVATION IN OPEN AREAS WHERE POSSIBLE.
K-3				OMIT INTERMEDIATE CONTOURS WHERE THE INDEX CONTOURS ARE CLOSER THAN 0.5" (13 mm).
K-4				INDEX CONTOURS ONLY IN VERY DENSE AREAS WHERE GROUND IS NOT VISIBLE. FOR LABELS SEE V-4(D) DO NOT LEAVE ANY AREAS BLANK.
K-5		0/2	ph-DepCont	USE DEPRESSION CONTOUR LINESTYLE TO INDICATE DEPRESSIONS. DEPRESSION TICS TO POINT DOWNHILL.
		0/2	ph-DepGNV	
K-6				NOTE: FOR INDEX CONTOUR ANNOTATION (SEE LEVEL 8).
K-7		0/2	ph-fCont	FLOAT CONTOUR FOR BRIDGE SURFACE.
			ph-fDepCont	FLOAT DEPRESSION CONTOUR FOR BRIDGE SURFACE.
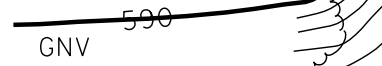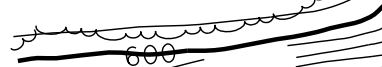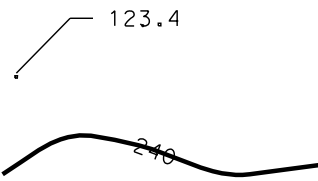
ENGLISH

METRIC

16
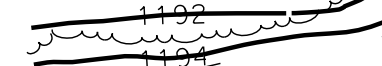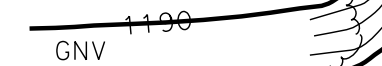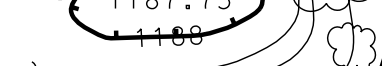
SPOT ELEVATIONS

LEVEL 8 - COLOR 7

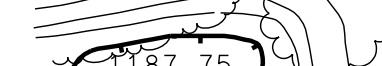| OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
E-1	1234.1	0		A) DECIMAL POINT IS THE LOCATION OF THE ELEVATION. B) THE SPOT ELEVATION TEXT SHALL BE PLACED AT THE TRUE ELEVATION. C) THE TEXT JUSTIFICATION SHALL CORRESPOND TO. THE DECIMAL POINT - CENTER BOTTOM JUSTIFICATION. D) ANNOTATE 1 DECIMAL PLACE FOR 1"=50′ AND 2 DECIMAL PLACES FOR 1:500 (METRIC) E) SEE ALSO LEVEL 11 "DATA FOR DTM". USE LS=0 FOR LEVEL 11 GROUND POINTS. USE LS= ph-float FOR LEVEL 11 POINTS ON ELEVATED STRUCUTRES
E-2	ROADWAYS AND RAILROADS			PLACE A SPOT ELEVATION EVERY 2in (50 mm) IF THERE ARE NO CONTOURS. CENTER SPOT ELEVATIONS BETWEEN TWO CONTOURS IF CONTOURS ARE 2"-4"(50-100 mm) APART.
E-3	SLOPING GROUND			PLACE A ROW OF SPOT ELEVATIONS 2" (50 mm) APART, CENTERED BETWEEN TWO CONTOURS, IF CONTOURS ARE 2 TO 4 in (50 TO 100 mm) APART.
E-4	FLAT GROUND			PLACE ON A FLEXIBLE 2 in (50 mm) GRID AT LEAST 1.5" (30 mm) AWAY FROM A CONTOUR.
E-5	EXTRA SPOT ELEVATIONS	0		PLACE ON TOPS, SADDLES, RIDGES, DEPRESSIONS, DITCHES, ETC.
E-6	USE OF LEADER LINES 123.4	0		USE LEADERLINES SPARINGLY, ONLY WHEN CLARIFICATION IS NECESSARY.
E-7	240	0		LABEL INDEX CONTOURS EVERY 10" (25 cm) OR CLOSER IN RUGGED TERRAIN (PLACE ANNOTATION ON LEVEL 8). ANNOTATION SHALL BE PLACED AT TRUE GROUND ELEVATION AND INDEX ANNOTATION WILL BE WT=0.

FOR FUTURE USE
LEVEL 9

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FILE IDENTIFICATION

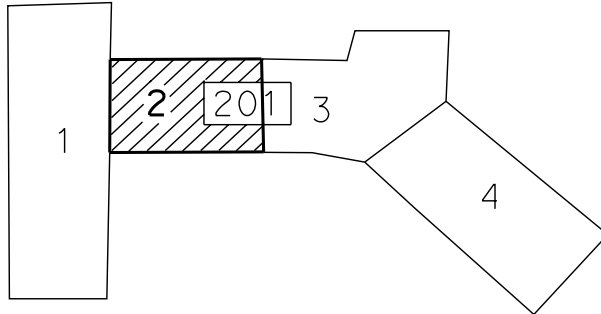LEVEL 10 - COLOR 0

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION

T-1   (layout diagram with blocks 1, 2, 201, 3, 4)   0

ORIENT THE FILE LAYOUT DIAGRAM SO THAT THE NORTH DIRECTION IS THE SAME AS MAP. LAYOUT DIAGRAM SHOULD OUTLINE MAPPING LIMITS OF EACH FILE. CROSSHATCH THE AREA COVERED BY CURRENT MAP FILE.

201   IS A 1"=20' (1:200) SCALE MAP INSIDE OF 1"=50' (1:500) SCALE MAPPING.

T-2

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
12-0BA-55_____ PM 17.2/17.9_____ FILE 1____ OF 1____
PHOTO ASC: 0513-153A___ PHOTO DATE: 03-11-05 PHOTO SCALE 1:_____
MAP ASC: 0501-16e___ MAP COMPLETION DATE: 03-23-05
FILENAME: C05016E0501.DGN_
DIGITAL COMPILATION BY:
------------------ABC MAPPING COMPANY----------------

VERTICAL DATUM: NGVD 1929
COORDINATE SYSTEM: CCS 83 (1991.35)_____ ZONE 6
UNITS: US SURVEY FEET: MAP SCALE 1"= 50:_ CONTOUR INTERVAL: 2'__
DESIGN PLANE: 4___ GO= 5853251.6352,1941251.6352,-214748.6352___

WT: 1   TBE TBM

THE TITLE BLOCK DATA ENTERED IN THIS CELL IS SUPPLIED BY THE OFFICE OF PHOTOGRAMMETRY IN THE MAPPING ORDER LETTER.

THE CONTRACTOR IS REQUIRED TO FILL IN ALL BLANK SPACES IN THE ENTER DATA FIELDS OF THE TITLE BLOCK.

TBE = ENGLISH TITLE BLOCK
TBM = METRIC TITLE BLOCK

T-3   (Caltrans Metric logo)   0   ML   METRIC LOGO - FOR METRIC MAP FILES ONLY

19

FILE IDENTIFICATION

| OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
T-5		1	NA	NORTH ARROW

DATA FOR DTM

OoP
REFERENCE
CODE

DESCRIPTION

D-1   **POINT ELEMENTS:** AT THE SAME DIGITIZED SPOT ELEVATION DECIMAL POINT ON
LEVEL 8, PLACE AN **ACTIVE POINT** ON LEVEL 11 FOR EACH SPOT ELEVATION.
ANNOTATE ON LEVEL 8. POINT ELEMENT IS PLACED AT TEXT NODE (DECIMAL POINT).
(ELEMENT TYPE=3, LV=11, CO=7, WT=0, LC=0)
HELPFUL HINT: WHEN PLACING SPOT ELEVATIONS WITH MORE THAN ONE DIGIT TO THE LEFT OF THE DECIMAL POINT.
PLACE AN EQUAL NUMBER OF BLANK SPACES AFTER THE DIGIT ON THE RIGHT TO KEEP THE TEXT JUSTIFICATION
"CENTER BOTTOM"

         1234,1

ACTIVE POINT

D-2   **TERRAIN BREAKLINES:** TRUE GROUND ELEVATION. (LV=11, CO=3, WT=0, LC=0)

LINE WEIGHT=0, LINE CODE=0, COLOR=3

A) COMPILE AT SIGNIFICANT CHANGES IN THE SLOPE OF THE TERRAIN, MANMADE
    OR NATURAL.
   EXAMPLES:

     1) TOP AND TOE OF CUT OR FILL SLOPE.
     2) EDGE OF CUT SLOPE BENCH.
     3) ACROSS THE CREST OF A HILL.
     4) ACROSS THE BOTTOM OF A DEPRESSION.
     5) GROUND AS NEAR THE FRONT OF RETAINING AND HEADWALLS AS POSSIBLE.
     6) GROUND AS NEAR THE BACK OF RETAINING AND HEADWALLS AS POSSIBLE.

B) DISTANCE BETWEEN POINTS ALONG THESE ELEMENTS SHALL NOT EXCEED 30 m (GROUND DISTANCE).

C) BREAK LINES SHALL NOT CROSS OTHER BREAKLINES.

D) IN ELEVATION WHERE BREAKLINES CROSS PLANIMETRIC OR CONTOUR LINES,THE DIFFERNECE BETWEEN
    CROSSING LINES WILL NOT EXCEED 0.1M.

E) BREAKLINE INTENDED TO SHOW AN OFFSET IN DISTANCE AND ELEVATION WILL NOT CROSS
    (ie. CURBLINE AND FLOWLINE OR GUTTER).

NOTE:

1) SEE CONTRACT FOR PAYABLE AND NON-PAYABLE BREAKLINES.

D-3   AN "f" IN FRONT OF A LINESTYLE NAME INDICATES A LINESTYLE THAT WILL BE USED
FOR ELEVATED STRUCTURES SUCH AS A BRIDGE. (ie. ph-fcurb)
THESE ELEVATED LINESTYLES WILL APPEAR IDENTICAL TO THEIR GROUND COUNTERPARTS, BUT WILL HAVE
A SMALL "f" IN FRONT OF THE NAME IN ORDER TO SEPERATE THEM FROM TRUE GROUND LINESTYLES.
THESE LINESTYLES, WHICH ARE USED ON ELEVATED STRUCTURES, WILL BE REMOVED DURING PRODUCTION
OF A DTM.

GRID TICS AND GRID ANNOTATION

LEVEL 12 - COLOR 5

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
G-1	0.75" (20 mm)	0	TIC	GRID TICK - (A POINT CELL, VIEW INDEPENDENT).
G-2	X 2 016 500 Y 650 200	0		A) LABEL GRID COORDINATES ON THE OUTSIDE PERIMETER GRID TICKS ONLY. PLACE LABELS ON THE OUTSIDE OF THE GRID TICK, AWAY FROM THE MAPPING. B) TEXT SHALL BE ORIENTED ON GRID TICKS SUCH THAT LABELS ARE LEGIBLE RELATIVE TO THE DIRECTION OF THE FLIGHT LINE.
G-3	0.50" (12 mm)	0		SUPPLEMENTAL OR ALTERNATE COORDINATE SYSTEM GRID TICK.

ENGLISH MAP

MAP SCALE	GRID SPACING	AT EVEN COORDINATES
1"=20'	100'	100'
1"=50'	500'	500'
1"=100'	1000'	1000'
1"=200'	2000'	2000'

METRIC MAP

MAP SCALE	GRID SPACING	AT EVEN COORDINATES
1:200m	50m	50m
1:500m	100m	100m
1:1000m	200m	200m
1:2000m	1000m	1000m

G-4

G-5   AT LEAST 3 GRID TICKS MUST BE COMMON BETWEEN FILES, PLOTTED SHEETS AND ADJOINING PROJECTS.

MAP SCALES

OoP REFERENCE CODE	MAPPING SCALE	C.I.	INDEX C.I.	SPOT ELEV	GRAPHIC SCALE	TEXT SIZE	MAPPING USED IN CONJUNCTION WITH:
METRIC:							
S-1	1:200	0.25 m	1 m	0.00	0.4	0.6 m	STRUCTURES DESIGN.
S-2	1:500	0.50 m	2 m	0.00	1.0	1.5 m	ROADWAY DESIGN.
S-3	1:1000	1.0 m	5 m	0.0	2.0	3 m	STUDIES: e.g. ENVIRONMENTAL, FEASIBILITY, AND PRELIMINARY DESIGN.
S-4	1:2000	2.0 m	10 m	0.0	4.0	6 m	PRELIMINARY STUDIES: e.g. NEW ROUTE LOCATION, BYPASS, MASS TRANSPORTATION.
ENGLISH:							
S-5	1"=20'	1 ft	5 ft	0.00	0.4	3 ft	STRUCTURES DESIGN.
S-6	1"=50'	2 ft	10 ft	0.0	1.0	6 ft	ROADWAY DESIGN.
S-7	1"=100'	5 ft	25 ft	0.0	2.0	12 ft	STUDIES: e.g. ENVIRONMENTAL, FEASIBILITY, AND PRELIMINARY DESIGN.
S-8	1"=200'	10 ft	50 ft	0.0	4.0	24 ft	PRELIMINARY STUDIES: e.g. NEW ROUTE LOCATION, BYPASS, MASS TRANSPORTATION.

NOTES

DESCRIPTION

N-1   SMALL CIRCLES AND SQUARES SHALL BE 0.08" (2 mm) UNLESS OTHERWISE NOTED.

N-2   SPACES IN DASHED LINES SHALL BE 0.06" (1.5 mm) UNLESS OTHERWISE NOTED.

N-3   TOPOGRAPHY SHALL BE DRAFTED WITH TWO LINE WEIGHTS, FINE AND THICK.
        HIGHWAY, STREET, AND PROPER NAMES SHALL BE DRAFTED WITH MEDIUM WEIGHT.

                    FINE   - MicroStation WT=0, (0.3 mm)
                    MEDIUM - MicroStation WT=1, (0.5 mm)
                    THICK - MicroStation WT=2, (0.6 mm)

N-4   THE FLIGHT LINE ANGLE WILL BE THE ACTIVE ANGLE FOR TEXT IN THE MODEL.

N-5   TEXT SHALL BE UPPER CASE, VIEW DEPENDENT, LS=0, CALTRANS FONT 2, AND
        0.12" (3 mm) SQUARE. ALLOWABLE EXCEPTIONS TO FONT AND SIZE ARE IN CERTAIN
        CELLS AND DIAGRAMS. (i.e. TITLE BLOCKS AND FILE LAYOUT DIAGRAMS).

N-6   STATE HIGHWAYS SHALL BE LABELED WITH COUNTY ABBREVIATION AND ROUTE
        NUMBER; e.g. **SAC - 80** . HIGHWAY, STREET, AND PROPER NAMES SHALL BE
        SHOWN ONCE IN EVERY NEAT MODEL. LABELS SHALL BE ON THE LEVEL AND
        NEAR THE ELEVATION OF THAT WHICH THEY ANNOTATE; e.g. **PACIFIC OCEAN**
        (LV=6, LC=0, WT=1, CO=1). AN EXCEPTION TO THIS IS CONTOUR ANNOTATION
        AND SPOT ELEVATIONS WHICH ARE ON LEVEL 8 (SPOT ELEV) INSTEAD OF LEVEL 7.

N-7   SURFACE TYPES ON LEVELS 2,3,4,5 AND 6 SHALL BE LABELED A MAXIMUM OF 20".
        (500 mm) APART (ASPH, CONC, DIRT, GRASS AND GNV)

N-8   LABEL STRUCTURE AND BUILDING "SHADOWS" WHERE THE GROUND IS NOT VISIBLE.

NOTES

DESCRIPTION

N-9   IF MAPPING IS METRIC, THE DESIGN FILE WILL HAVE WORKING UNIT PARAMETERS:

Unit Names
Master Units: m
    Sub Units: mm
Resolution
            1000   mm Per m
            10   Pos Units Per mm

N-10   IF MAPPING IS U.S. SURVEY FEET, THE DESIGN FILE WILL HAVE WORKING UNIT PARAMETERS:

Unit Names
Master Units: FT
    Sub Units: TN
Resolution
            10   TN Per FT
            1000   Pos Units Per TN
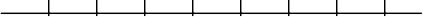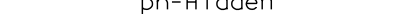
PHOTOGRAMMETRY CUSTOM LINESTYLES

V2Photo.rsc - February, 2004

WEIGHT	LEVEL	LINESTYLE APPEARANCE AND NAME	WEIGHT	LEVEL	LINESTYLE APPEARANCE AND NAME
2	2/3	ph-Curb	2	2	ph-Build
0/2	7	ph-DepCont	0	2	ph-Deck
0/2	7	ph-DepGNV	2	2/3	ph-Dike
0	2	ph-Dirt	0	6	ph-FL
0	2/3	ph-Asph	0	4	ph-Hedge
0	2	ph-Fence	0	2	ph-MWallF
0/2	7	ph-GNV	0	11	ph-fBreak
0	2	ph-GrdRail	2	3	ph-fBrgRail
0	2/3	ph-LnStrp	0/2	2/3	ph-fConc
0		ph-Levee		7	ph-fCont
0	2	ph-MWall	0/2	7	ph-fGNV
0	2	ph-MedBar	0/2	7	ph-fDepCont

PHOTOGRAMMETRY CUSTOM LINESTYLES

V2Photo.rsc - February, 2004

WEIGHT	LEVEL	LINESTYLE APPEARANCE AND NAME	WEIGHT	LEVEL	LINESTYLE APPEARANCE AND NAME
2	2	ph-RWall	0/2	7	ph-fDepGNV
0	2	ph-RR1KC	2	2/3	ph-fCurb
0	2	ph-RR1K	0	2/3	ph-fLnStrp
0	2	ph-RR500	0	2	ph-fMedBar
0	2	ph-RR200	2	3	ph-fETW
0	3	ph-ETW	2	3	ph-fETW2
2	3	ph-ETW2	0	11	ph-Hidden
0	4	ph-Trees	0	2	ph-Cattle
2	2	ph-RWallF	0	4	ph-Vines
2	2	ph-RWallM			begin ... end
0	6	ph-Water			